

CLINICAL STUDIES  
IN THE TREATMENT OF THE  
NUTRITIONAL DISORDERS  
OF INFANCY  

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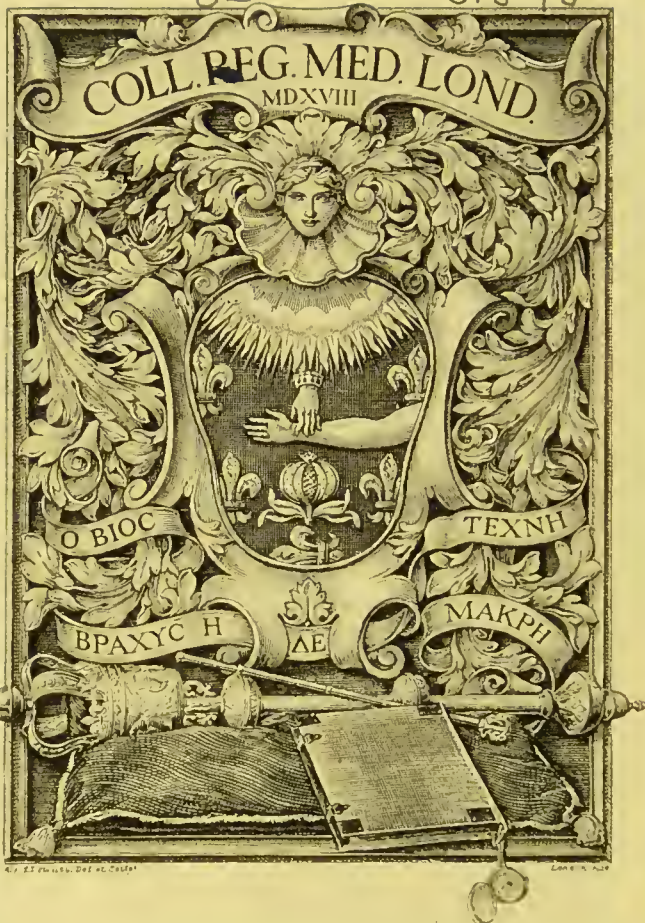
*RALPH VINCENT*

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# Clinical Studies

## IN THE TREATMENT OF THE

# NUTRITIONAL DISORDERS OF INFANCY

BY

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'For it is the truth I seek after, by which I am sure that never any man was hurt; and as sure that he is hurt that continueth in any error or ignorance whatsoever.'—MARCUS AURELIUS.



LONDON  
BAILLIÈRE, TINDALL AND COX  
8, HENRIETTA STREET, COVENT GARDEN

1906

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## PREFACE

THE following accounts are abstracts of typical cases of infantile malnutrition that have been under the care of the author. In order to allow of full quotation and verification no private cases are included. The cases were all treated at the Infants' Hospital; the abstracts are taken from the charts and notes preserved in the records of the hospital, and the reference number is placed in brackets at the beginning of each case. For the study of the treatment of infants actual observation and that practical knowledge which can only be obtained in the wards are essential. But it is hoped that the detailed records of precise dietetic adjustment may be of some service to those who desire to make themselves familiar with scientific method as applied to infant-feeding.

In the remarks following each case the points are very briefly brought out; no attempt has been made to deal with anything but the purely clinical aspects. The general principles underlying the practice have been dealt with in the author's 'Nutrition of the Infant,' and this series may be regarded as a practical supplement to that work.

I, HARLEY STREET,  
LONDON, W.

*August, 1906.*



# CLINICAL STUDIES IN THE TREATMENT OF THE NUTRITIONAL DISORDERS OF INFANCY

## CASE I.

(R. 95.) V. B., female infant. Admitted January 15, 1904. Age, seven months; weight, 6 pounds 9 ounces.

**History.**—Not breast-fed at all. Has been ‘under the doctor’ since birth. One of twins; her fellow died at two months of age. Has been fed with milk and water.

Motions very thick, black or green in colour, generally about once a day. Diarrhœa about every third day.

### Treatment and Progress.

*January 15.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 5'50      |
|   | Whey-proteids | ... | ... | 0'80      |
|   | Caseinogen    | ... | ... | 0'10      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, three hours.

*January 19.*—Has lost 4 ounces; motions yellowish-green, undigested, not frequent; vomited twice the previous night; taking badly.



|    |               |     |     | Per cent. |
|----|---------------|-----|-----|-----------|
| Rx | Fat           | ... | ... | 1'50      |
|    | Lactose       | ... | ... | 5'50      |
|    | Whey-proteids | ... | ... | 0'80      |
|    | Caseinogen    | ... | ... | 0'10      |
|    | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, three hours.

*January 22.*—Has lost 3 ounces; motions greenish-yellow, not undigested; is taking better to-day; up to now has hardly taken any food.

*January 26.*—Has gained 2 ounces; taking well now; motions still greenish.

*January 29.*—Has gained 4 ounces; motions becoming yellow; taking well.

*February 2.*—Has lost 1 ounce; motions yellow.

|    |               |     |     | Per cent. |
|----|---------------|-----|-----|-----------|
| Rx | Fat           | ... | ... | 2'00      |
|    | Lactose       | ... | ... | 6'00      |
|    | Whey-proteids | ... | ... | 0'75      |
|    | Caseinogen    | ... | ... | 0'25      |
|    | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, three hours.

*February 5.*—Has gained 2 ounces; motions yellow.

|    |               |     |     | Per cent. |
|----|---------------|-----|-----|-----------|
| Rx | Fat           | ... | ... | 2'25      |
|    | Lactose       | ... | ... | 6'00      |
|    | Whey-proteids | ... | ... | 0'75      |
|    | Caseinogen    | ... | ... | 0'25      |
|    | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, three hours.

*February 9.*—Has gained 2 ounces; motions normal.

*February 12.*—Has gained 2 ounces.

*February 16.*—Has gained 5 ounces; motions normal.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*February 19.*—Has gained 2 ounces ; motions normal.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*February 23.*—Has gained 5 ounces ; motions normal.

Infant discharged weighing 7 pounds 9 ounces.

**Remarks.**—A typical case of advanced marasmus, due solely to absence of adequate food. The prognosis was bad because of the extremely low weight for age. Most cases with such a low weight at seven months would be incurable by reason of atrophy of the digestive glands. The good features in the prognosis were the fact that syphilis could almost certainly be excluded, and that nothing in the way of predigested food had been given. As shown by the prescriptions, the digestive powers were exceptionally vigorous for such a marasmic condition. The infant lost 7 ounces in weight in the first week—a good sign as a rule. After an alteration of the proportion of fat on January 19 no other change was made till February 2, for the clinical record showed that the infant was reacting to the diet as well as could be expected, and no alteration was advisable until time had been allowed for the processes of normal digestion to develop. In the last twenty-one days of its residence in hospital the infant gained 18 ounces in weight.

## CASE II.

(R. 96.) H. F. S., male infant. Admitted January 15, 1904. Age, nine weeks; weight, 7 pounds 3 ounces.

**History.**—Breast-fed for the first week; then fed with milk and barley-water. Has been wasting for some time. Motions green and offensive. Case sent from St. Bartholomew's Hospital.

**Treatment and Progress.**

*January 15.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.50      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Nine feeds of 5 ounces. Interval, two and a half hours.

*January 19.*—Has gained 3 ounces; motions green and offensive; taking badly.

*January 22.*—Weight stationary; motions greenish-yellow, with curds; takes alternate feeds badly; no vomiting.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.75      |
|   | Lactose       | ... | ... | 6.50      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Nine feeds of 5 ounces. Interval, two and a half hours.

*January 26.*—Has lost 1 ounce ; motions as before.

*January 29.*—Has gained 6 ounces ; motions yellowish-green, with curds.

*February 2.*—Has gained 2 ounces ; motions yellowish-green, with curds.

*February 5.*—Has lost 1 ounce ; motions greenish-yellow, with curds.

|    |               |     |     |     | Per cent. |
|----|---------------|-----|-----|-----|-----------|
| Rx | Fat           | ... | ... | ... | 3'00      |
|    | Lactose       | ... | ... | ... | 6'50      |
|    | Whey-proteids | ... | ... | ... | 0'50      |
|    | Caseinogen    | ... | ... | ... | 0'15      |
|    | Alkalinity    | ... | ... | ... | 5'00      |

Nine feeds of 5 ounces. Interval, two and a half hours.

*February 9.*—Has gained 4 ounces ; motions greenish-yellow, well digested, no curds.

*February 12.*—Has lost 2 ounces ; infant not satisfied ; feeds increased to 6 ounces.

*February 16.*—Has gained 4 ounces ; motions yellow.

|    |               |     |     |     | Per cent. |
|----|---------------|-----|-----|-----|-----------|
| Rx | Fat           | ... | ... | ... | 3'25      |
|    | Lactose       | ... | ... | ... | 6'50      |
|    | Whey-proteids | ... | ... | ... | 0'75      |
|    | Caseinogen    | ... | ... | ... | 0'25      |
|    | Alkalinity    | ... | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

*February 19.*—Has gained 8 ounces ; motions yellow (small).

|    |               |     |     |     | Per cent. |
|----|---------------|-----|-----|-----|-----------|
| Rx | Fat           | ... | ... | ... | 3'25      |
|    | Lactose       | ... | ... | ... | 6'50      |
|    | Whey-proteids | ... | ... | ... | 0'75      |
|    | Caseinogen    | ... | ... | ... | 0'50      |
|    | Alkalinity    | ... | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, two and a half hours.

*February 23.*—Has gained 6 ounces.

*February 26.*—Has gained 4 ounces.    Infant discharged weighing 9 pounds 4 ounces.

**Remarks.**—A very different case from Case I., being one of failure to thrive, with intestinal indigestion at a comparatively early age. Note the intolerance of caseinogen and the rapid improvement when this was reduced (February 5). In the last fourteen days the infant gained 22 ounces.



## CASE III.

(R. 98.) C. M., male infant. Admitted January 19, 1904. Age, four weeks; weight, 7 pounds 11 ounces.

**History.**—Not breast-fed at all; fed on milk and barley-water; vomiting constantly; motions constipated and pale; purulent discharge from umbilicus; mastitis.

**Treatment and Progress.**

*January 19.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.00      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Ten feeds of 3 ounces. Interval, two hours.

*January 22.*—Weight stationary; motions green, undigested, not frequent; taking well; no vomiting.

*January 26.*—Has lost 3 ounces; motions green, undigested, rather frequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1.25      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Nine feeds of 5 ounces. Interval, two and a half hours.

*January 29.*—Weight stationary; motions greenish-yellow, undigested.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1.25      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.80      |
|   | Caseinogen    | ... | ... | 0.10      |
|   | Alkalinity    | ... | ... | 5.00      |

Nine feeds of 5 ounces. Interval, two and a half hours.

*February 2.*—Has gained 6 ounces; motions small, green, undigested; general condition much improved; umbilicus healing and mastitis disappearing.

*February 5.*—Has gained 4 ounces; motions green, undigested.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1.25      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.50      |
|   | Caseinogen    | ... | ... | 0.10      |
|   | Alkalinity    | ... | ... | 5.00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*February 9.*—Has lost 2 ounces; motions the same.

*February 12.*—Weight stationary; motions green.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1.50      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.80      |
|   | Caseinogen    | ... | ... | 0.10      |
|   | Alkalinity    | ... | ... | 5.00      |

Nine feeds of 7 ounces. Interval, two and a half hours.

*February 16.*—Has gained 6 ounces.

*February 19.*—Has gained 3 ounces; motions greenish-yellow.

*February 23.*—Has gained 5 ounces; motions yellow and yellowish-green.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'75      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'80      |
|   | Caseinogen    | ... | ... | 0'10      |
|   | Alkalinity    | ... | ... | 5'00      |

Nine feeds of 7 ounces. Interval, two and a half hours.

*February 26.*—Has gained 4 ounces; motions yellow and yellowish-green.

*March 1.*—Has gained 5 ounces.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'60      |
|   | Caseinogen    | ... | ... | 0'20      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 7 ounces. Interval, two and a half hours.

*March 4.*—Has gained 7 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 7 ounces. Interval, two and a half hours.

*March 8.*—Has gained 2 ounces; motions greenish-yellow.

*March 11.*—Weight stationary; motions greenish-yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 15.*—Has gained 4 ounces; motions greenish-yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'75      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 18.*—Has gained 2 ounces; motions normal.

*March 22.*—Has gained 4 ounces; motions normal.

*March 25.*—Has gained 5 ounces; motions normal.  
Infant discharged weighing 10 pounds 15 ounces.

**Remarks.**—An infant with healthy but delicate digestive organs rapidly suffering from crude methods of infant feeding, and requiring careful dietetic adjustment to re-establish the functions. Note the retreat from the original prescription and the delicate adjustment of the proteid necessary, also the tendency of the infant in the later stages, when the food is changed, to gain at first but slightly or not at all, and then to gain well. Three weeks after admission it was only 5 ounces heavier than when admitted, though the clinical signs were greatly improved. In the last month it gained 29 ounces.

## CASE IV.

(R. 104.) K. W., female infant. Admitted February 9, 1904. Age, three months; weight, 7 pounds 5 ounces.

**History.**—Fine plump baby at birth; breast-fed for first three weeks. The mother's milk did not agree, and the infant wasted and was very constipated. The baby was then fed with peptonized milk, which disagreed; then fed on whey, but the wasting continued, and the infant was constantly vomiting; then Allen and Hanbury's Food No. 1 was given, when constipation was severe; and Nestlé's food was tried, which gave rise to diarrhœa. Now being fed with Nestlé's condensed milk—1 teaspoonful to  $\frac{1}{2}$  pint of water. Motions very hard and green.

**Treatment and Progress.**

| <i>February 9.</i> |               |     |     |                 |
|--------------------|---------------|-----|-----|-----------------|
| Rx                 | Castor-oil    | ... | ... | ... ʒi. statim. |
|                    |               |     |     | Per cent.       |
| Rx                 | Fat           | ... | ... | ... 1.50        |
|                    | Lactose       | ... | ..  | ... 5.50        |
|                    | Whey-proteids | ... | ... | ... 0.50        |
|                    | Caseinogen    | ... | ... | ... 0.10        |
|                    | Alkalinity    | ... | ... | ... 5.00        |

Nine feeds of 6 ounces. Interval, two and a half hours.

*February 12.*—Has lost 5 ounces; very cross and fretful since admission; has taken very little food; semipurulent



discharge from right eye ; motions yellowish-green, small, not frequent, not constipated.

*February 16.*—Has lost 1 ounce ; taking very badly ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.50      |
|   | Lactose       | ... | ... | 5.50      |
|   | Whey-proteids | ... | ... | 0.50      |
|   | Caseinogen    | ... | ... | 0.10      |
|   | Alkalinity    | ... | ... | 5.00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*February 19.*—Has lost 4 ounces ; taking very badly ; motions yellow.

*February 23.*—Has lost 1 ounce ; crying incessantly ; taking very badly. Potassium bromide, 1 grain, t.d.s.

*February 26.*—Has gained 4 ounces ; crying much less ; taking much better ; motions yellow and greenish-yellow ; bromide discontinued.

*March 1.*—Has gained 2 ounces ; motions yellow and yellowish-green ; general condition improving.

*March 4.*—Has lost 3 ounces ; five motions in the last twenty-four hours.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.50      |
|   | Lactose       | ... | ... | 5.50      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*March 8.* — Weight stationary ; motions still rather frequent ; general condition improving.

*March 11.*—Has gained 5 ounces; motions yellow, undigested; still not taking well.

*March 15.*—Has gained 2 ounces; motions yellow.

*March 18.*—Has lost 2 ounces; motions normal.

*March 22.*—Has gained 5 ounces; motions normal.

*March 25.*—Has gained 1 ounce; motions normal.

*March 29.*—Has gained 4 ounces; motions yellow, rather infrequent.

*April 1.*—Has gained 2 ounces.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3·00      |
|   | Lactose       | ... | ... | 6·00      |
|   | Whey-proteids | ... | ... | 0·75      |
|   | Caseinogen    | ... | ... | 0·25      |
|   | Alkalinity    | ... | ... | 5·00      |

Seven feeds of 6 ounces. Interval, three hours.

*April 5.*—Has gained 7 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3·25      |
|   | Lactose       | ... | ... | 6·00      |
|   | Whey-proteids | ... | ... | 0·75      |
|   | Caseinogen    | ... | ... | 0·40      |
|   | Alkalinity    | ... | ... | 5·00      |

Seven feeds of 6 ounces. Interval, three hours.

*April 8.*—Has gained 3 ounces; motions yellow, rather frequent at first, after change of food; now small, yellow, slightly undigested.

*April 12.*—Has gained 3 ounces; motions greenish-yellow and yellow.

*April 15.*—Has gained 5 ounces; motions yellow.

*April 19.*—Has gained 1 ounce; motions yellow.

*April 23.*—Has gained 5 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces.

*April 26.*—Has gained 10 ounces; motions yellow. Infant discharged weighing 10 pounds.

**Remarks.**—A typical case illustrating the results of hopelessly haphazard feeding. Towards the end of the first fortnight the infant was very near death, taking very little food and crying incessantly. This nervous condition was due to the terrible deprivation of fat in the previous diet. Every effort was made to give the infant as full a supply of fat as it could stand, for unless this could be absorbed with comparative rapidity death was inevitable, owing to the exhaustion of the nervous system.

From March 4 to March 25 the gradual improvement was manifest, but it was not safe to increase the food, as the signs showed that the maximum of fat for the time had been reached. In the last fortnight in hospital the infant gained 21 ounces.

## CASE V.

(R. 105.) F. L. S., female infant. Admitted February 12, 1904. Age, four weeks; weight, 4 pounds 11 ounces.

**History.**—Not breast-fed at all. For first three weeks after birth fed on cow's milk and water (equal parts). For the last week has been fed on milk 1 part, water 2 parts, and lime-water 1 part. Always vomits after food.

Motions frequent, green, offensive, and containing curds. Buttocks excoriated. The infant has been wasting since birth. Mother subject to fits.

**Treatment and Progress.***February 12.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'00      |
|   | Lactose       | ... | ... | 5'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'10      |
|   | Alkalinity    | ... | ... | 5'00      |

Eleven feeds of 3 ounces. Interval, two hours.

*February 16.*—Has gained 1 ounce; motions green; vomiting occasionally.

*February 19.*—Weight stationary; motions green; vomiting occasionally.

*February 23.*—Has gained 2 ounces; motions still green, but improving; vomiting once in twenty-four hours. Contented, and sleeping well; taking well. Buttocks very much improved.

*February 26.*—Weight stationary; motions green; not taking well. Hyd. c. cret., gr.  $\frac{1}{3}$ , t.d.s.

*March 1.*—Has gained 1 ounce; motions green and undigested.

|    |               |     |     | Per cent. |
|----|---------------|-----|-----|-----------|
| Rx | Fat           | ... | ... | 1.50      |
|    | Lactose       | ... | ... | 5.50      |
|    | Whey-proteids | ... | ... | 0.50      |
|    | Caseinogen    | ... | ... | 0.10      |
|    | Alkalinity    | ... | ... | 5.00      |

Ten feeds of 4 ounces. Interval, two hours.

*March 4.*—Has gained 1 ounce; motions green and undigested.

*March 8.*—Has gained 4 ounces; motions yellow, small, partly undigested.

*March 11.*—Weight stationary; motions small, green, undigested. Hyd. c. cret. discontinued.

*March 15.*—Has gained 2 ounces; motions yellowish-green; vomiting slightly occasionally.

*March 18.*—Weight stationary; motions green and small.

*March 23.*—Has gained 1 ounce; motions small, green.

*March 25.*—Has gained 2 ounces; motions greenish-yellow.

|    |               |     |     | Per cent. |
|----|---------------|-----|-----|-----------|
| Rx | Fat           | ... | ... | 1.75      |
|    | Lactose       | ... | ... | 6.00      |
|    | Whey-proteids | ... | ... | 0.60      |
|    | Caseinogen    | ... | ... | 0.20      |
|    | Alkalinity    | ... | ... | 5.00      |

Eight feeds of 5 ounces. Interval, two and a half hours.

*March 29.*—Has lost 1 ounce; vomited twice yesterday; pustular rash on right thigh.



*April 1.*—Has gained 3 ounces; motions greenish-yellow.

*April 4.*—Has gained 2 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'60      |
|   | Caseinogen    | ... | ... | 0'20      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 5 ounces. Interval, two and a half hours.

*April 8.*—Has gained 2 ounces.

*April 12.*—Has gained 1 ounce.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 5 ounces. Interval, two and a half hours.

*April 15.*—Motions small, green, undigested; vomiting about once in twenty-four hours.

*April 19.*—Weight stationary; motions yellow; miliary rash.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 5 ounces. Interval, two and a half hours.

*April 23.*—Has gained 1 ounce ; motions yellow. Infant discharged weighing 6 pounds 3 ounces, having gained 1 pound 8 ounces since admission.

**Remarks.**—An infant of subnormal weight at birth with its organs and functions healthy, but imperfectly developed. Such infants require exceptional care and great refinement in the diet from birth. The crude methods of infant feeding usually resorted to show their effects at once in such cases. The digestive secretions being perturbed, and the organs being but feebly active, time is needed to get these into working order, and at this stage alteratives and intestinal antiseptics such as hyd. c. cret., when given with discretion and for a short period, may be useful. The progress in the infant here is not to be determined only by the increase in the weight, for the quality of the food which it could digest on leaving the hospital is a much stronger testimony to the improvement of its condition than the gain in weight. Note the temporary disturbance on March 29, caused by the comparatively slight change of diet.

## CASE VI.

(R. 106.) J. L., male infant. Admitted February 12, 1904. Age, four months; weight, 6 pounds 8 ounces.

**History.**—Breast-fed for first month; then fed on bread and milk for three weeks, and since then on cow's milk and water (equal parts). Always vomits after food; motions constipated (one every other day). Was an in-patient at St. Bartholomew's Hospital for two days, and the case was then transferred to the Infants' Hospital.

**Treatment and Progress.**

*February 12.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'15      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 4 ounces. Interval, two and a half hours.

*February 16.*—Has gained 3 ounces; motions yellow, not constipated.

*February 19.*—Has gained 2 ounces; motions yellow, not constipated.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'15      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 4 ounces. Interval, two and a half hours.

*February 23.*—Has gained 1 ounce; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.25      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

*February 26.*—Has gained 4 ounces; motions green and undigested.

*March 1.*—Has gained 6 ounces; motions yellowish-green and green.

*March 4.*—Has lost 1 ounce; motions yellow.

*March 8.*—Has gained 6 ounces; motions yellow or yellowish-green.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.50      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 11.*—Has gained 1 ounce; motions yellow.

*March 15.*—Has gained 2 ounces; motions yellow.

*March 18.*—Has gained 4 ounces; motions green, loose.

*March 22.*—Has gained 3 ounces; motions yellow.

*March 25.*—Has gained 1 ounce; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.75      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Seven feeds of 7 ounces. Interval three hours.

*March 29.*—Has gained 7 ounces; motions greenish-yellow, loose.

*April 1.*—Has gained 1 ounce; motions greenish-yellow.

|   |               |     |     |     | Per cent. |
|---|---------------|-----|-----|-----|-----------|
| R | Fat           | ... | ... | ... | 3'00      |
|   | Lactose       | ... | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | ... | 0'40      |
|   | Alkalinity    | ... | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*April 5.*—Has gained 4 ounces; motions yellow, loose. Infant discharged weighing 9 pounds 4 ounces, having gained 2 pounds 12 ounces since admission.

**Remarks.**—An infant undoubtedly vigorous at birth, but suffering from perversion of the digestive processes and severe malnutrition, due to improper food. Note the contrast between this infant and the previous case.

## CASE VII.

(R. 107.) J. B., female infant. Admitted February 16, 1904. Age, seven months; weight, 7 pounds 3 ounces.

**History.**—Not breast-fed at all. At first fed on Nestlé's condensed milk with water. For some time appeared to thrive; then taken to a day nursery, and there fed on cow's milk and water (equal parts). Wasting was noticed, and infant was fed on albumen water. Infant was then in a mission hospital, where it was fed on a mixture of cow's milk and barley-water. The infant was a fine baby at birth, began to waste at about three months of age, and since that age has always vomited its food.

**Treatment and Progress.***February 16.*

|   |               |     |     |     | Per cent. |
|---|---------------|-----|-----|-----|-----------|
| R | Fat           | ... | ... | ... | 1'00      |
|   | Lactose       | ... | ... | ... | 5'00      |
|   | Whey-proteids | ... | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | ... | 0'15      |
|   | Alkalinity    | ... | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*February 19.*—Has gained 1 ounce; motions yellow, loose.

*February 23.*—Has gained 1 ounce; motions yellow; taking well.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'00      |
|   | Lactose       | ... | ... | 5'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*February 26.*—Has gained 9 ounces; motions yellow; taking well.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*March 1.*—Has gained 8 ounces; motions yellow; taking well.

*March 4.*—Has lost 4 ounces; motions yellow and greenish-yellow; a good deal of regurgitation without vomiting.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'50      |
|   | Lactose       | ... | ... | 5'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*March 8.*—Has gained 4 ounces; motions yellow and small.



|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'75      |
|   | Lactose       | ... | ... | 5'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*March 11.*—Has lost 6 ounces ; has vomited frequently ; motions greenish-yellow.

*March 15.*—Has gained 10 ounces ; motions large, loose, yellow ; vomiting ceased.

*March 18.*—Motions yellow ; has lost 2 ounces ; no vomiting.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 5'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*March 22.*—Has gained 4 ounces ; motions yellow.

*March 25.*—Has gained 3 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*March 29.*—Has gained 5 ounces ; motions yellow.

*April 1.*—Has gained 4 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 5.*—Has gained 2 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'75      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 8.*—Has gained 5 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 12.*—Has gained 1 ounce; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'40      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 15.*—Has gained 7 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 19.*—Has gained 1 ounce.

*April 22.*—Has gained 7 ounces.

*April 26.*—Has gained 8 ounces; motions yellow. Infant discharged weighing 11 pounds 8 ounces, having gained 4 pounds 5 ounces since admission.

**Remarks.**—This case affords an instance of the inadequacy of the routine methods employed in infant feeding. The 'ignorance' or 'improvidence' of the mother, which are so often paraded as the cause of infantile malnutrition, are here put out of court by the fact that the infant was attended to and fed by more or less skilled persons in public institutions. Yet at seven months of age it was in a terrible condition of malnutrition, only weighing 7 pounds 3 ounces. By precise adjustment of the diet the vomiting ceased, and the infant steadily put on weight. The gastric irritability engendered by such a long course of improper food rendered it necessary to keep the caseinogen low, even when the other constituents were being rapidly increased. Note the vomiting following soon after the first increase of caseinogen (March 11). Yet the proteid-content was comparatively rich by reason of the whey-proteids (*vide* 'Nutrition of the Infant,' p. 70).

## CASE VIII.

(R. III.) H. M. C., male infant. Admitted February 19, 1904. Age, four and a half months; weight, 10 pounds.

**History.**—Breast-fed for the first three months; then fed with barley-water and milk (equal parts). This upset the infant, and it was fed with barley-water and beef-juice. Rapid wasting ensued, and barley-water and milk was tried again without avail. The baby had ‘sherry-whey’ for one week, and for the last weeks has been fed on peptonized milk. The infant was a big baby at birth, but has wasted for the last two months, and constantly vomits after food. Has had a bad cough. Motions almost white, and offensive.

**Treatment and Progress.**

*February 12.*

|   |               |     |     |     |               |
|---|---------------|-----|-----|-----|---------------|
| R | Castor-oil    | ... | ... | ... | 3 ii. statim. |
|   |               |     |     |     | Per cent.     |
|   | Fat           | ... | ... | ... | 2·00          |
|   | Lactose       | ... | ... | ... | 5·00          |
|   | Whey-proteids | ... | ... | ... | 0·50          |
|   | Caseinogen    | ... | ... | ... | 0·10          |
|   | Alkalinity    | ... | ... | ... | 5·00          |

Seven feeds of 4 ounces. Interval, three hours.

*February 23.*—Has lost 5 ounces; vomited curds twice; motions yellow, undigested. Not satisfied; feeds increased to 6 ounces.

*February 26.*—Has lost 2 ounces; motions yellow, digested; no vomiting.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 5'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'15      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*March 1.*—Has gained 3 ounces; motions yellow; no vomiting.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 5'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*March 4.*—Weight stationary; motions yellow. Not quite satisfied.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 8.*—Has gained 7 ounces. Flesh much firmer; motions normal; taking all the feeds.

*March 11.*—Has lost 2 ounces; motions white and pale green, loose, three and four in twenty-four hours.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 5'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 15.*—Has gained 5 ounces ; motions yellow.

*March 18.*—Has gained 3 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'75      |
|   | Lactose       | ... | ... | 5'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 22.*—Has gained 4 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 5'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 25.*—Has lost 1 ounce ; motions yellow. Not satisfied ; feeds increased to  $8\frac{1}{2}$  ounces.

*March 29.*—Has gained 17 ounces.

*April 1.*—Has gained 1 ounce ; motions yellow, rather infrequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of  $8\frac{1}{2}$  ounces. Interval, three hours.

*April 5.*—Has gained 6 ounces ; motions normal.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'40      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of  $8\frac{1}{2}$  ounces. Interval, three hours

*April 8.*—Has gained 3 ounces; motions normal.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'50      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'40      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of  $8\frac{1}{2}$  ounces. Interval, three hours.

*April 12.*—Has gained 9 ounces; motions normal. Infant discharged weighing 13 pounds, having gained 3 pounds 5 ounces since February 23.

**Remarks.**—The history prior to admission and the results of the treatment in hospital leave little to be said. They show conclusively both the cause of the condition and the essential principles underlying infantile nutrition. Note the intestinal disorder caused by the prescription of March 4 (*vide* note for March 11) and its cure by the adjustment of the diet to meet the indications. Note also the tendency to hesitate at the same proportion of fat when given later (March 12). The case is also remarkable as showing the marked tendency of the infant when its vigour is re-established to gain rapidly in order to establish as far as possible its proper weight for age. Such a gain as that recorded on March 29 is only seen in infants recovering from malnutrition.



## CASE IX.

(R. 113.) J. F. C., male infant. Admitted February 23, 1904. Age, three months ; weight, 7 pounds 8 ounces.

**History.**—Breast-fed entirely for one month, then fed by the breast and with cow's milk and barley-water. Motions yellow and offensive ; no vomiting. Has been an out-patient at a London hospital, where, according to the mother's statement, she was informed that the case was incurable. The mother has lost four children from 'the same complaint.' The case was recommended to the hospital by Dr. Travers Smith of Kilburn.

**Treatment and Progress.***February 23.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'80      |
|   | Caseinogen    | ... | ... | 0'10      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*February 26.*—Has lost 2 ounces ; motions green, rather loose and offensive ; taking and sleeping well.

*March 1.*—Motions very green ; infant very ill and collapsed ; colon irrigated. Hyd. c. cret., gr.  $\frac{1}{3}$ , t.d.s.

*March 4.*—Weight stationary ; motions yellowish-green, improving ; taking well ; no vomiting.

*March 8.*—Has gained 5 ounces ; motions yellow. Hyd. c. cret. discontinued.

*March 11.*—Has gained 3 ounces; motions yellowish-green; taking well.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'15      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 15.*—Has gained 3 ounces; motions yellow; taking well.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 18.*—Has lost 2 ounces; motions green, undigested, loose; did not take new food at all well at first, now taking better.

*March 22.*—Has gained 3 ounces; motions yellow; taking well.

*March 25.*—Has gained 5 ounces.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 29.*—Has gained 5 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*April 1.*—Has gained 2 ounces ; motions normal.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'75      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*April 5.*—Has gained 7 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*April 8.*—Has gained 5 ounces. Infant discharged weighing 9 pounds 11 ounces, having gained 31 ounces in the last month.

**Remarks.**—Note the critical condition in the first fortnight, the weight on March 4 being 1 ounce less than the weight on admission (February 23) ; this is a common occurrence in these cases. Here again hyd. c. cret. was used, but it was suspended as soon as the intestinal decomposition had ceased. The note of March 18 shows the susceptibility to the precise diet.

## CASE X.

(R. 118.) L. R. S., female infant. Admitted March 4, 1904. Age, three months; weight, 6 pounds 15 ounces.

**History.**—Breast-fed for the first two months. Did not thrive. Much screaming and very restless. Then fed with milk and barley-water, but ‘kept wasting.’ Motions very loose and dark green; buttocks excoriated. Mother has lost three infants from nutritional disorders.

**Treatment and Progress.**

*March 4.*

R Castor-oil      ...      ...      ...      ̄i statim.

Per cent.

|   |               |     |     |     |      |
|---|---------------|-----|-----|-----|------|
| R | Fat           | ... | ... | ... | 2.00 |
|   | Lactose       | ... | ... | ... | 6.00 |
|   | Whey-proteids | ... | ... | ... | 0.75 |
|   | Caseinogen    | ... | ... | ... | 0.25 |
|   | Alkalinity    | ... | ... | ... | 5.00 |

Eight feeds of 6 ounces. Interval, two and a half hours.

*March 5.*—Motions very green and very frequent

*March 7.*—Motions still green. Colon irrigation.

*March 8.*—Has gained 1 ounce; motions green.

*March 11.*—Has lost 1 ounce; motions still green.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'15      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

*March 15.*—Has lost 3 ounces ; motions still green and undigested. Hyd. c. cret., gr.  $\frac{1}{3}$ , t.d.s.

*March 18.*—Has gained 6 ounces ; motions greenish-yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'15      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 7 ounces. Interval, three hours.

*March 22.*—Has gained 8 ounces ; motions greenish-yellow.

*March 25.*—Has lost 3 ounces ; motions greenish-yellow. Not satisfied. Hyd. c. cret. discontinued.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'75      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'15      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*March 29.*—Has gained 3 ounces ; motions yellow, rather infrequent.

*April 1.*—Has gained 5 ounces ; motions green.

*April 5.*—Has gained 2 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'60      |
|   | Caseinogen    | ... | ... | 0'20      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 8.*—Has gained 7 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'60      |
|   | Caseinogen    | ... | ... | 0'20      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 12.*—Has gained 7 ounces ; motions yellow.

*April 15.*—Has gained 5 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'75      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 19.*—Has gained 2 ounces ; motions yellow.

*April 22.*—Has gained 4 ounces ; motions normal.

Infant discharged weighing 9 pounds 10 ounces, having gained 2 pounds 14 ounces since March 15.

**Remarks.**—Note the retreat from the original prescription. This was too high, especially in regard to the fat. Note also the effect of the hyd. c. cret. when first ordered and the improvement on its discontinuance when no longer indicated.

## CASE XI.

(R. 119.) A. F. H., female infant. Admitted March 8, 1904. Age, two and a quarter months; weight, 6 pounds 8 ounces.

**History.**—Entirely breast-fed since birth. Infant has been ‘gradually failing’ since birth. Motions ‘pasty’; buttocks excoriated.

**Treatment and Progress.**

*March 8.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.00      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Eight feeds of 3 ounces. Interval, two and a half hours.

*March 11.*—Has gained 2 ounces; motions large, loose, greenish-yellow. Not satisfied; feeds increased to 4 ounces.

*March 15.*—Has gained 5 ounces; motions loose, greenish-yellow.

*March 18.*—Has lost 6 ounces; motions have been very green and frequent. The colon was irrigated, and the motions became less frequent and greenish-yellow in colour.



|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'00      |
|   | Lactose       | ... | ... | 5'50      |
|   | Whey-proteids | ... | ... | 0'60      |
|   | Caseinogen    | ... | ... | 0'20      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 5 ounces. Interval, two and a half hours.

*March 22.*—Has lost 1 ounce; motions green and loose; have been frequent, but less so to-day than in previous days.

*March 25.*—Motions still very frequent yesterday, some of them yellowish in colour. Castor-oil  $\bar{3}$ i. statim; hyd. c. cret., gr.  $\frac{1}{3}$ , three doses.

*March 29.*—Has gained 7 ounces. On March 28 four motions, green and undigested; to-day two motions, yellowish-green, with curds.

*April 1.*—Has gained 1 ounce; motions greenish-yellow, undigested. Not satisfied.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'60      |
|   | Caseinogen    | ... | ... | 0'20      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of  $6\frac{1}{2}$  ounces. Interval, two and a half hours.

*April 5.*—Has gained 6 ounces; motions greenish-yellow.

*April 8.*—Has gained 6 ounces; motions greenish-yellow.

*April 12.*—Weight stationary; motions greenish-yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1.50      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Eight feeds of  $6\frac{1}{2}$  ounces. Interval, two and a half hours.

*April 15.*—Has gained 4 ounces; motions greenish-yellow.

*April 19.*—Has gained 3 ounces; motions greenish-yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1.75      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Eight feeds of  $6\frac{1}{2}$  ounces. Interval, two and a half hours.

*April 22.*—Has gained 3 ounces; motions greenish-yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.00      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Eight feeds of  $6\frac{1}{2}$  ounces. Interval, two and a half hours.

*April 26.*—Has gained 5 ounces; motions green.

*April 29.*—Has lost 4 ounces; motions green, with curds.

*May 3.*—Has lost 1 ounce; motions green. Hyd. c. cret., gr.  $\frac{1}{3}$ , three doses.

*May 8.*—Has gained 4 ounces; motions yellow. Infant discharged weighing 8 pounds 14 ounces, having gained 2 pounds 6 ounces since March 22.

**Remarks.**—The most interesting feature in this case is that the infant was entirely breast-fed prior to admission. In addition to those mothers who cannot provide milk at all, there are a large number of mothers who, while supplying milk, fail to supply milk of adequate quality. And much harm has been done by the unqualified advocacy of ‘mothers’ milk’ without reference to quality. Some of the worst cases of malnutrition brought to the Infants’ Hospital have been cases where the infant has been breast-fed throughout.

Note the retreat from the original prescription, which was too much for the infant even though it succeeded admirably at first. In these cases the liver and the tissues became engorged; the liver especially comes into a condition of stasis, and the food then acts as an irritant. Reduction of the food and purgation are generally indicated in these circumstances.

## CASE XII.

(R. 127.) D. H., female infant. Admitted March 29, 1904. Age, six months; weight, 6 pounds 11 ounces.

**History.**—Weighed 7 pounds 8 ounces at birth. Entirely breast-fed for first four months, then given milk and barley-water. Infant has bad cough. Case sent from Guy's Hospital.

**Treatment and Progress.**

*March 29.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'00      |
|   | Lactose       | ... | ... | 5'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'10      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 5 ounces. Interval, two and a half hours.

*April 1.*—Has lost 6 ounces; motions yellow and green. Infant has difficulty in swallowing, and has to be fed with spoon. Eyes discharging; 2 per cent. protargol solution ordered.

*April 5.*—Has gained 5 ounces; motions greenish, with mucus.

*April 8.*—Weight stationary; general condition improved.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'25      |
|   | Lactose       | ... | ... | 5'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'10      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 5 ounces. Interval, two and a half hours.

*April 12.*—Has lost 1 ounce ; motions greenish-yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'50      |
|   | Lactose       | ... | ... | 5'50      |
|   | Whey-proteids | ... | ... | 0'60      |
|   | Caseinogen    | ... | ... | 0'20      |
|   | Alkalinity    | ... | ... | 5'00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*April 15.*—Has gained 7 ounces ; motions yellowish-green.

*April 19.*—Has gained 3 ounces ; motions yellowish-green.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'75      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'60      |
|   | Caseinogen    | ... | ... | 0'20      |
|   | Alkalinity    | ... | ... | 5'00      |

Nine feeds of  $6\frac{1}{2}$  ounces. Interval, two and a half hours.

*April 22.*—Has gained 2 ounces ; motions greenish-yellow, slightly undigested.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.00      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.60      |
|   | Caseinogen    | ... | ... | 0.20      |
|   | Alkalinity    | ... | ... | 5.00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

*April 26.*—Has gained 1 ounce; now able to suck; cries at night; motions greenish-yellow. Not satisfied.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.25      |
|   | Lactose       | ... | ... | 6.50      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*April 29.*—Has gained 6 ounces; motions yellow, somewhat undigested.

*May 3.*—Has gained 2 ounces; motions yellow.

*May 6.*—Has gained 2 ounces; motions yellow.

*May 10.*—Has gained 6 ounces; motions yellow, small.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.75      |
|   | Lactose       | ... | ... | 6.50      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*May 13.*—Has gained 2 ounces; motions greenish-yellow.

*May 17.*—Has gained 11 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*May 20.*—Weight stationary; motions yellow, well digested.

*May 24.*—Has gained 3 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'40      |
|   | Alkalinity    | ... | ... | 5'00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*May 26.*—Has gained 8 ounces; motions yellow. Infant discharged weighing 10 pounds, having gained 3 pounds 11 ounces since April 1.

**Remarks.**—This case also illustrates the malnutrition following inadequate breast-feeding. For the greater part of its life the infant had been breast-fed, and the administration of a crude mixture of milk and barley-water following this could only intensify the condition. The critical condition of the infant may be realized from the fact that it was not able to suck until it had been in the hospital for four weeks.



## CASE XIII.

(R. 132.) J. McE., male infant. Admitted April 12, 1904. Age, nine weeks ; weight, 7 pounds 6 ounces.

**History.**—Breast-fed since birth ; has been wasting since birth. Motions green, slimy ; no vomiting.

**Treatment and Progress.**

| <i>April 12.</i> |               |     |     |     | Per cent. |
|------------------|---------------|-----|-----|-----|-----------|
| Rx               | Fat           | ... | ... | ... | 2'00      |
|                  | Lactose       | ... | ... | ... | 6'00      |
|                  | Whey-proteids | ... | ... | ... | 0'75      |
|                  | Caseinogen    | ... | ... | ... | 0'25      |
|                  | Alkalinity    | ... | ... | ... | 5'00      |

Eight feeds of 4 ounces. Interval, two hours.

*April 15.*—Has gained 3 ounces ; motions yellowish-green, slightly undigested.

*April 19.*—Has lost 1 ounce ; motions yellow. Not satisfied.

|    |               |     |     |     | Per cent. |
|----|---------------|-----|-----|-----|-----------|
| Rx | Fat           | ... | ... | ... | 2'50      |
|    | Lactose       | ... | ... | ... | 6'00      |
|    | Whey-proteids | ... | ... | ... | 0'75      |
|    | Caseinogen    | ... | ... | ... | 0'25      |
|    | Alkalinity    | ... | ... | ... | 5'00      |

Eight feeds of 5 ounces. Interval, two and a half hours.

*April 22.*—Has gained 8 ounces ; motions yellow and yellowish-green.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'40      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 5 ounces. Interval, two and a half hours.

*April 26.*—Has gained 3 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 5 ounces. Interval, two and a half hours.

*April 29.*—Has gained 5 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'25      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

*May 3.*—Has gained 13 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'50      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

May 6.—Has gained 5 ounces ; motions small, yellow.

May 10.—Has gained 7 ounces ; motions yellow, rather infrequent.

|   |               |     |     |     | Per cent. |
|---|---------------|-----|-----|-----|-----------|
| R | Fat           | ... | ... | ... | 3·75      |
|   | Lactose       | ... | ... | ... | 7·00      |
|   | Whey-proteids | ... | ... | ... | 0·75      |
|   | Caseinogen    | ... | ... | ... | 0·75      |
|   | Alkalinity    | ... | ... | ... | 5·00      |

Seven feeds of 7 ounces. Interval, three hours.

May 13.—Has gained 6 ounces ; motions normal.

Infant discharged weighing 10 pounds 7 ounces, having gained 3 pounds 1 ounce since admission.

**Remarks.**—The fact that the infant had been entirely breast-fed and that its age was only nine weeks rendered the case much less severe than most of those that have been described. In three days the perversion of the digestive processes had disappeared, and the infant was ready to profit by food of higher qualities. The case was a straightforward one, and it was possible to increase the quality of the food every three or four days. The mother of this infant gave birth to a baby in 1904, 1905, and 1906. All three infants have been in the wards of the Infants' Hospital. Curiously enough, the last infant was admitted on July 24, 1906, at the same age (nine weeks) as this case, and in a very similar condition. The other two are both thriving.

## CASE XIV.

(R. 120.) N. C. G., female infant. Admitted March 8, 1904. Age, thirteen months; weight, 9 pounds, 8 ounces.

**History.**—Breast-fed for the first three months, then fed on cow's milk. Has refused food lately. Motions dark, offensive. Ribs markedly rachitic; muscles and tissues extremely flabby.

**Treatment and Progress.**

*March 8.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.50      |
|   | Lactose       | ... | ... | 5.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Seven feeds of 4 ounces. Interval, three hours.

*March 11.*—Has lost 4 ounces; motions brown, offensive. Sleeps well. Not satisfied; feed increased to 6 ounces.

*March 15.*—Has gained 4 ounces. Until to-day motions extremely offensive; to-day yellow and not offensive. Taking well.

*March 18.*—Has gained 5 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.75      |
|   | Lactose       | ... | ... | 5.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Seven feeds of 6 ounces. Interval, three hours.

*March 22.*—Has gained 2 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R.  | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 5'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |
| Seven feeds of 6 ounces. Interval, three hours. |               |     |     |           |

*March 25.*—Weight stationary ; motions yellow, slightly constipated. Not satisfied.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R.  | Fat           | ... | ... | 3'25      |
|   | Lactose       | ... | ... | 6'00      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |
| Seven feeds of 7 ounces. Interval, three hours. |               |     |     |           |

*March 29.*—Has gained 7 ounces ; motions yellow, well digested.

*April 1.*—Has gained 8 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R.  | Fat           | ... | ... | 3'50      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |
| Seven feeds of 7 ounces. Interval, three hours. |               |     |     |           |

*April 5.*—Has gained 7 ounces ; motions yellow.

*April 8.*—Has gained 7 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'75      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 12.*—Has gained 8 ounces ; motions yellow.

*April 15.*—Has gained 4 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'75      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'75      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 19.*—Has gained 4 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 4'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 1'00      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 22.*—Has gained 4 ounces ; motions yellow.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R | Fat        | ... | ... | 4'00      |
|   | Lactose    | ... | ... | 6'50      |
|   | Proteids   | ... | ... | 1'50      |
|   | Alkalinity | ... | ... | 5'00      |

Seven feeds of 8 ounces. Interval, three hours.

*April 26.*—Has lost 1 ounce ; motions yellow.

*April 29.*—Has gained 4 ounces ; motions yellow.

*May 3.*—Has gained 5 ounces. Infant discharged weighing 13 pounds 9 ounces, having gained 4 pounds 5 ounces since March 11.

**Remarks.**—A ‘flabby’ rachitic infant. Note the frequent prescriptions and the quality of the food-mixtures—rich in all the elements of nutrition and yet ‘delicate.’ The whey-proteids were maintained in full strength despite the increase in caseinogen. Note the slight fall in weight when the whole proteids were substituted for the split proteids.



## CASE XV.

(R. 141.) S. J. E., male infant. Admitted May 12, 1904. Age, four and a half months; weight, 9 pounds 6 ounces.

**History.**—Not breast-fed at all. Fed with cow's milk and water—1 part of milk to 2 parts of water. Vomits occasionally. Motions green, slightly offensive, and frequent. Has been wasting for the last two months.

**Treatment and Progress.**

*May 12.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.50      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

*May 17.*—Has gained 1 ounce; motions yellow, well digested.

*May 20.*—Weight stationary; motions greenish-yellow, rather frequent (six yesterday). Orange-juice ordered.

*May 24.*—Has gained three ounces; motions yellow, normal, not frequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.75      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Seven feeds of 7 ounces. Interval, three hours.

*May 27.*—Has gained 2 ounces; general condition much improved.

*May 30.*—Has gained 6 ounces; motions yellow, well digested. Orange-juice discontinued.

*June 3.*—Has gained 8 ounces; motions greenish yellow.

*June 7.*—Has gained 2 ounces; motions yellowish green, undigested.

*June 10.*—Has gained 4 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3.00      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.50      |
|   | Alkalinity    | ... | ... | 5.00      |

Seven feeds of 7 ounces. Interval, three hours.

*June 14.*—Has gained 1 ounce; motions yellowish-green, not frequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3.25      |
|   | Lactose       | ... | ... | 6.50      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.75      |
|   | Alkalinity    | ... | ... | 5.00      |

Seven feeds of 7 ounces. Interval, three hours.

*June 17.*—Has gained 2 ounces; motions yellow, well digested.

*June 21.*—Has gained 7 ounces; motions yellow.

*June 24.*—Has gained 2 ounces; motions yellow. Infant discharged weighing 11 pounds 12 ounces.

**Remarks.**—Scorbutus occurs in the early months of infancy, but the symptoms are not those usually described, as these belong to the advanced stages of the disease. The author has described the disease as occurring in twins at three months of age! \* In this case orange-juice was ordered when the motions were frequent, with immediately satisfactory results. A mild enteritis, together with a history of scorbutic diet (milk is nearly always boiled nowadays), suggests scorbutus when the infant is simply not 'doing well' rather than seriously ill. Antiscorbutic treatment needs to be suspended as soon as the indications are met. For there is a profound difference between *anti*-scorbutic treatment and the prevention of scorbutus by the provision of a healthy diet. Note the improvement following the suspension of the fruit-juice.

\* 'Nutrition of the Infant,' second edition, pp. 275-277.

## CASE XVI.

(R. 62.) Q. O., female infant. Admitted November 14, 1903. Age, six months; weight, 6 pounds 14 ounces.

**History.**—One of twins; weighed 7 pounds at birth; has not thrived since birth. For the first month was fed by the breast, supplemented with cow's milk and water; during the second and third months milk and water only; during the last month Mellin's Food has been given. No vomiting; motions constipated and offensive; ribs beaded; wizened appearance; extreme marasmus.

**Treatment and Progress.**

*November 14.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'30      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Nine feeds of 4 ounces. Interval, two and a half hours.

*November 17.*—Has gained 3 ounces; motions yellow; taking well.

*November 20.*—Has gained 3 ounces; motions yellow.

|  |               |     |     | Per cent. |
|--|---------------|-----|-----|-----------|
| R  | Fat           | ... | ... | 2'00      |
|  | Lactose       | ... | ... | 6'50      |
|  | Whey-proteids | ... | ... | 0'75      |
|  | Caseinogen    | ... | ... | 0'25      |
|  | Alkalinity    | ... | ... | 5'00      |
| Nine feed of 5 ounces. Interval, two and a half hours. |               |     |     |           |

*November 24.*—Has gained 6 ounces; looks very pale, but taking well; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |
| Nine feeds of 5 ounces. Interval, two and a half hours. |               |     |     |           |

*November 27.*—Has lost 3 ounces; vomiting; motions yellow; not taking well.

*December 1.*—Has gained 1 ounce; motions yellow; taking better.

*December 4.*—Has lost 4 ounces; motions yellow; no vomiting.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 1'50      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |
| Nine feeds of 5 ounces. Interval, two and a half hours. |               |     |     |           |

*December 8.*—Has lost 7 ounces; looks very ill and collapsed; no vomiting; motions yellow.

*December 11.*—Has lost 9 ounces; motions yellow and loose, sometimes offensive.

*December 15.*—Has gained 10 ounces; motions yellow, not loose; taking well.

*December 18.*—Has lost 4 ounces; motions yellow; feeds increased to 6 ounces.

*December 22.*—Has gained 9 ounces; motions yellow.

*December 24.*—Has lost 2 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*December 28.*—Has gained 2 ounces; motions yellow.

*January 1.*—Has lost 1 ounce; motions yellow.

*January 5.*—Has gained 8 ounces; motions yellow.

*January 8.*—Has gained 2 ounces; motions yellow.

*January 12.*—Has lost 2 ounces; vomited twice in twenty-four hours; motions normal.

*January 15.*—Has gained 2 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'25      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*January 19.*—Has gained 3 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'50      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*January 22.*—Has lost 1 ounce; motions yellow (one in twenty-four hours); slight vomiting (once in twenty-four hours).

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'75      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*January 26.*—Has gained 2 ounces; motions yellow, constipated; slight regurgitation.

*January 29.*—Has gained 7 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*February 2.*—Has lost 3 ounces; motions yellow; taking well.

*February 5.*—Has gained 2 ounces; motions yellow.



|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'25      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*February 9.*—Has gained 4 ounces ; motions yellow.

*February 12.*—Has lost 1 ounce.

*February 16.*—Has gained 1 ounce.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*February 19.*—Has gained 3 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'50      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*February 23.*—Has gained 7 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'75      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*February 26.*—Has lost 8 ounces ; motions yellow.

*March 1.*—Has lost two ounces ; motions yellow.

*March 4.*—Has gained 11 ounces ; motions yellow.  
Infant discharged weighing 8 pounds 9 ounces.

**Remarks.**—The infant gained 12 ounces in the first ten days, and the writer during these days was engaged in rapidly increasing the quality of the food, being tempted to do so by the encouraging progress of the infant and its need of food. Between November 24 and December 8, instead of gaining in weight it lost 1 pound 6 ounces. At the time the writer was surprised at the early progress in such a case of advanced marasmus, but he would not, at the present time, be tempted into such prescriptions. The prescription of December 24 was the first to prove really successful. The whole course of this case is typical of marasmus. In these cases the infant frequently thrives for a short period on a comparatively rich food, but it cannot maintain its power of dealing with it. Rapid loss of weight ensues, and in consequence the enrichment of the diet in these cases must be carried out very gradually.

## CASE XVII.

(R. 43.) J. B., male infant. Admitted October 3, 1903. Age, six months; weight, 7 pounds 12 ounces.

**History.**—One of twins prematurely born; the fellow-twin died. Has not thrived since birth. Fed on milk and barley-water, and has suffered much from vomiting and diarrhœa; has had bad cough for about a week. Motions green and very offensive.

**Treatment and Progress.**

*October 3.*

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R | Fat        | ... | ... | 2'00      |
|   | Lactose    | ... | ... | 6'00      |
|   | Proteids   | ... | ... | 1'00      |
|   | Alkalinity | ... | ... | 5'00      |

Eight feeds of 4 ounces. Interval, two and a half hours.

*October 6.*—Has gained 1 ounce.

*October 9.*—Has lost 3 ounces; motions green.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 4 ounces. Interval, two and a half hours.

*October 13.*—Has gained 3 ounces; vomiting a good deal; motions still green.

*October 16.*—Has lost 1 ounce; vomiting ceased; motions green, undigested; infant suffering from bronchial catarrh. Castor-oil,  $\text{ʒii.}$ , hyd. c. cret., gr.  $\frac{1}{3}$ , three doses.

*October 20.*—Has gained 5 ounces; motions yellow; spasms of coughing in the evening. Not satisfied; feeds increased to  $5\frac{1}{2}$  ounces.

*October 23.*—Has gained 3 ounces; motions yellow.

*October 27.*—Has gained 2 ounces; motions yellow; cough has quite ceased for the last two days.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1'50      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ..  | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of  $5\frac{1}{2}$  ounces. Interval, two and a half hours.

*October 30.*—Has gained 4 ounces; motions yellow.

*November 3.*—Weight stationary; motions green, undigested; normal until yesterday.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of  $5\frac{1}{2}$  ounces. Interval, two and a half hours.

*November 6.*—Has gained 1 ounce; motions yellow.

*November 10.*—Has gained 1 ounce; motions yellow and well digested.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R | Fat        | ... | ... | 2.50      |
|   | Lactose    | ... | ... | 7.00      |
|   | Proteids   | ... | ... | 1.25      |
|   | Alkalinity | ... | ... | 5.00      |

Eight feeds of  $5\frac{1}{2}$  ounces. Interval, three hours.

*November 13.*—Has lost 1 ounce ; motions yellow. Not satisfied.

*November 17.*—Has gained 8 ounces ; motions yellow. Not satisfied.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R | Fat        | ... | ... | 3.00      |
|   | Lactose    | ... | ... | 7.00      |
|   | Proteids   | ... | ... | 1.25      |
|   | Alkalinity | ... | ... | 5.00      |

Eight feeds of  $6\frac{1}{2}$  ounces. Interval, three hours.

*November 20.*—Has gained 1 ounce ; motions yellow.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R | Fat        | ... | ... | 3.50      |
|   | Lactose    | ... | ... | 7.00      |
|   | Proteids   | ... | ... | 1.25      |
|   | Alkalinity | ... | ... | 5.00      |

Eight feeds of  $6\frac{1}{2}$  ounces. Interval, three hours.

*November 24.*—Has gained 4 ounces ; motions yellow.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R | Fat        | ... | ... | 3.50      |
|   | Lactose    | ... | ... | 7.00      |
|   | Proteids   | ... | ... | 1.50      |
|   | Alkalinity | ... | ... | 5.00      |

Eight feeds of  $6\frac{1}{2}$  ounces. Interval, three hours.

*November 27.*—Has gained 4 ounces ; motions yellow.

|    |            |     |     | Per cent. |
|----|------------|-----|-----|-----------|
| Rx | Fat        | ... | ... | 4'00      |
|    | Lactose    | ... | ... | 7'00      |
|    | Proteids   | ... | ... | 1'50      |
|    | Alkalinity | ... | ... | 5'00      |

Eight feeds of  $6\frac{1}{2}$  ounces. Interval, three hours.

*December 1.*—Has gained 1 ounce; vomiting occasionally.

|    |            |     |     | Per cent. |
|----|------------|-----|-----|-----------|
| Rx | Fat        | ... | ... | 4'00      |
|    | Lactose    | ... | ... | 7'00      |
|    | Proteids   | ... | ... | 1'25      |
|    | Alkalinity | ... | ... | 5'00      |

Eight feeds of  $6\frac{1}{2}$  ounces. Interval, three hours.

*December 4.*—Has lost 3 ounces; vomiting occasionally.

*December 8.*—Has gained 9 ounces; no vomiting.

*December 11.*—Has gained 3 ounces; motions yellow.

*December 15.*—Has gained 2 ounces.

*December 18.*—Has lost 2 ounces; motions yellow.

Infant discharged weighing 10 pounds 6 ounces, having gained 2 pounds 12 ounces since October 9.

**Remarks.**—A rather subtle case in which the digestive reactions soon required a fairly dense food. This appeared to be indicated at first, as shown by the prescription of a whole proteid, but it was too much for the infant at that time. Note the treatment of green, undigested motions by increasing the caseinogen (November 3), a treatment not by any means to be recommended as a general procedure. The whole proteid proved very successful later, but 1'50 per cent. (November 24) was too strong and caused vomiting.

## CASE XVIII.

(R. 143.) H. V. T., male infant. Admitted May 17, 1904. Age, ten weeks; weight, 10 pounds 8 ounces.

**History.**—Breast-fed since birth. Mother's milk failing, and attempts at hand-feeding caused severe indigestion. The mother was the wife of a coachman in the country, and his employers drew the writer's attention to the infant. Some attempts were made to feed the infant at home; as these did not succeed, the case was taken into the hospital.

**Treatment and Progress.**

*May 17.*

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.50      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.75      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

*May 20.*—Has lost 3 ounces; not taking well; fretting a good deal; vomiting slightly; motions green, loose.

*May 24.*—Has gained 2 ounces: much less fretful; motions yellow, very loose and undigested, fairly frequent.

*May 27.*—Has gained 1 ounce; motions green, loose.

*May 30.*—Weight stationary; motions yellow, loose.

*June 3.*—Has gained 8 ounces; motions small, yellowish-green.



|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2'75      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'40      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

*June 7.*—Has gained 4 ounces; motions pale green, rather frequent.

*June 10.*—Has gained 4 ounces; motions green.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

*June 14.*—Has gained 2 ounces; motions pale green and yellowish-green.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'25      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'75      |
|   | Caseinogen    | ... | ... | 0'75      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, two and a half hours.

*June 17.*—Has gained 5 ounces; motions small, pale yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3·50      |
|   | Lactose       | ... | ... | 7·00      |
|   | Whey-proteids | ... | ... | 0·75      |
|   | Caseinogen    | ... | ... | 1·00      |
|   | Alkalinity    | ... | ... | 5·00      |

Seven feeds of 7 ounces. Interval, three hours.

*June 21.*—Has gained 9 ounces; motions yellow, well digested.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R | Fat        | ... | ... | 3·50      |
|   | Lactose    | ... | ... | 7·00      |
|   | Proteids   | ... | ... | 1·25      |
|   | Alkalinity | ... | ... | 5·00      |

Seven feeds of 7 ounces. Interval, three hours.

*June 24.*—Weight stationary; motions yellow.

*June 28.*—Has gained 8 ounces; motions yellow. Infant discharged weighing 13 pounds.

**Remarks.**—The case was one of comparatively slight malnutrition, due to poor quality of mother's milk, complicated by difficulty in weaning. The case is therefore of a different type from most of those quoted, but it may be useful in showing the routine principles by which weaning and the establishment of the infant on substitute food may be carried out systematically.

## CASE XIX.

(R. 207.) J. E., male infant. Admitted September 20, 1904. Age, six weeks; weight, 5 pounds 12 ounces.

**History.**—First baby; refused breast from the first. At first fed on Nestlé's milk; then fed on cow's milk and water, equal parts. Crying night and day. Motions very green, very offensive; about six in the twenty-four hours. Has been wasting continually since birth.

**Treatment and Progress.***September 20.*

|    |            |     |     |     |             |
|----|------------|-----|-----|-----|-------------|
| R. | Castor-oil | ... | ... | ... | 5i. statim. |
|----|------------|-----|-----|-----|-------------|

## Per cent.

|    |               |     |     |     |      |
|----|---------------|-----|-----|-----|------|
| R. | Fat           | ... | ... | ... | 1'00 |
|    | Lactose       | ... | ... | ... | 5'00 |
|    | Whey-proteids | ... | ... | ... | 0'50 |
|    | Caseinogen    | ... | ... | ... | 0'15 |
|    | Alkalinity    | ... | ... | ... | 5'00 |

Ten feeds of 3 ounces. Interval, two hours.

*September 23.*—Has gained 3 ounces; motions very green at first, now becoming yellow, not offensive. Not satisfied; feeds increased to 4 ounces.

*September 28.*—Has lost 1 ounce; motions greenish-yellow, not frequent.

*September 30.*—Has lost 1 ounce; motions yellowish-green; taking well. Hyd. c. cret., gr.  $\frac{1}{3}$ , bis in diem.

*October 4.*—Has lost 1 ounce; motions greenish-yellow. Not satisfied; feeds increased to 5 ounces. Hyd. c. cret. discontinued.

*October 7.*—Has lost 4 ounces; very much collapsed yesterday; appeared to be dying; has since rallied.

*October 11.*—Has lost 3 ounces; motions greenish-yellow, not frequent; subcutaneous saline injections, one each day, ordered.

*October 14.*—Has gained 2 ounces; general condition has been improved by injections; motions yellow.

*October 17.*—Has lost 1 ounce; motions green, undigested.

*October 21.*—Has lost 1 ounce; motions pale green. Hyd. c. cret., gr.  $\frac{1}{3}$ , t.d.s.

*October 25.*—Has gained 1 ounce; motions yellow.

*October 28.*—Has gained 4 ounces; motions yellow.

*November 1.*—Weight stationary; motions yellow; general appearance improved.

*November 4.*—Weight stationary; motions yellow, not loose, four and five in twenty-four hours; not taking so well. Hyd. c. cret. discontinued.

*November 8.*—Has gained 8 ounces; motions yellow and greenish-yellow.

*November 11.*—Has gained 1 ounce; motions yellow, undigested, with much mucus.

*November 15.*—Has lost 3 ounces; motions yellow, with curds and mucus. Hyd. c. cret., gr.  $\frac{1}{3}$ , t.d.s.

*November 18.*—Has lost 3 ounces; motions yellow, with curds and mucus. Hyd. c. cret. discontinued.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 0.50      |
|   | Lactose       | ... | ... | 4.00      |
|   | Whey-proteids | ... | ... | 0.25      |
|   | Caseinogen    | ... | ... | nil       |
|   | Alkalinity    | ... | ... | 5.00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*November 22.*—Has gained 2 ounces; motions yellow and bright yellow (two in twenty-four hours).

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 0·60      |
|   | Lactose       | ... | ... | 4·50      |
|   | Whey-proteids | ... | ... | 0·25      |
|   | Caseinogen    | ... | ... | nil       |
|   | Alkalinity    | ... | ... | 5·00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*November 25.*—Has gained 2 ounces; motions yellow, no curds or mucus.

*November 29.*—Has gained 5 ounces; motions yellow.

*December 2.*—Has gained 1 ounce; motions yellow, infrequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 0·70      |
|   | Lactose       | ... | ... | 4·50      |
|   | Whey-proteids | ... | ... | 0·25      |
|   | Caseinogen    | ... | ... | nil       |
|   | Alkalinity    | ... | ... | 5·00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*December 6.*—Has lost 3 ounces; not taking so well; vomited slightly once; motions yellow.

*December 9.*—Has gained 2 ounces; taking well; motions yellow.

*December 12.*—Has gained 2 ounces; motions yellow.

*December 15.*—Weight stationary; motions yellow, rather infrequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 0·80      |
|   | Lactose       | ... | ... | 5·00      |
|   | Whey-proteids | ... | ... | 0·25      |
|   | Caseinogen    | ... | ... | nil       |
|   | Alkalinity    | ... | ... | 5·00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*December 19.*—Has gained 1 ounce; motions yellow, rather infrequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 0.90      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.25      |
|   | Caseinogen    | ... | ... | nil       |
|   | Alkalinity    | ... | ... | 5.00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*December 23.*—Has gained 2 ounces; motions yellow.

*December 27.*—Has gained 2 ounces; motions yellow, rather infrequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 1.25      |
|   | Lactose       | ... | ... | 6.50      |
|   | Whey-proteids | ... | ... | 0.25      |
|   | Caseinogen    | ... | ... | nil       |
|   | Alkalinity    | ... | ... | 5.00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*January 3, 1905.*—Has lost 2 ounces; motions bright yellow, not frequent.

*January 6.*—Has gained 4 ounces; motions yellow.

*January 10.*—Has gained 2 ounces; motions yellow, slightly constipated.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 1.50      |
|   | Lactose       | ... | ... | 7.00      |
|   | Whey-proteids | ... | ... | 0.50      |
|   | Caseinogen    | ... | ... | nil       |
|   | Alkalinity    | ... | ... | 5.00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*January 13.*—Has gained 2 ounces; motions greenish-yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 1'50      |
|   | Lactose       | ... | ... | 7'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'10      |
|   | Alkalinity    | ... | ... | 5'00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*January 17.*—Has gained 3 ounces; motions yellow, undigested.

*January 20.*—Has gained 3 ounces; motions yellow, small, constipated; discharge from left ear for the last two days.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 1'75      |
|   | Lactose       | ... | ... | 7'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'10      |
|   | Alkalinity    | ... | ... | 5'00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*January 24.*—Has gained 4 ounces; motions yellow, rather infrequent; discharge from ear ceased.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 2'00      |
|   | Lactose       | ... | ... | 7'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'15      |
|   | Alkalinity    | ... | ... | 5'00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*January 27.*—Has gained 1 ounce; motions yellow, none to-day.



|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2·25      |
|   | Lactose       | ... | ... | 7·00      |
|   | Whey-proteids | ... | ... | 0·50      |
|   | Caseinogen    | ... | ... | 0·25      |
|   | Alkalinity    | ... | ... | 5·00      |

Ten feeds of 5 ounces. Interval, two hours.

*January 31st.*—Has gained 4 ounces; motions yellow, infrequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2·50      |
|   | Lactose       | ... | ... | 7·00      |
|   | Whey-proteids | ... | ... | 0·50      |
|   | Caseinogen    | ... | ... | 0·25      |
|   | Alkalinity    | ... | ... | 5·00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*February 3.*—Has gained 1 ounce; motions yellow.

*February 7.*—Has gained 3 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2·75      |
|   | Lactose       | ... | ... | 7·00      |
|   | Whey-proteids | ... | ... | 0·50      |
|   | Caseinogen    | ... | ... | 0·25      |
|   | Alkalinity    | ... | ... | 5·00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*February 10.*—Has gained 3 ounces; motions bright yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 7'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'40      |
|   | Alkalinity    | ... | ... | 5'00      |
| Nine feeds of 6 ounces. Interval, two and a half hours. |               |     |     |           |

*February 14.*—Has gained 1 ounce; motions yellow.

*February 17.*—Has gained 1 ounce; motions yellow, infrequent, constipated.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 3'25      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |
| Nine feeds of 6 ounces. Interval, two and a half hours. |               |     |     |           |

*February 21.*—Has gained 3 ounces; motions yellow, constipated; not taking so well.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

*February 24.*—Has gained 4 ounces; motions yellow.

*February 28.*—Has gained 2 ounces; motions yellow, small.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'25      |
|   | Caseinogen    | ... | ... | 0'75      |
|   | Alkalinity    | ... | ... | 5'00      |
| Nine feeds of 6 ounces. Interval, two and a half hours. |               |     |     |           |

*March 3.*—Has lost 3 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Nine feeds of 6 ounces. Interval, two and a half hours.

*March 7.*—Weight stationary ; motions small, yellow.

*March 10.*—Weight stationary ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'25      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Eight feeds of 6 ounces. Interval, three hours.

*March 14.*—Has gained 4 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3'50      |
|   | Lactose       | ... | ... | 7'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*March 17.*—Has lost 1 ounce; vomited at first on change of food; motions yellow.

*March 21.*—Has gained 4 ounces; motions yellow, constipated.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3.50      |
|   | Lactose       | ... | ... | 7.00      |
|   | Whey-proteids | ... | ... | 0.25      |
|   | Caseinogen    | ... | ... | 0.75      |
|   | Alkalinity    | ... | ... | 5.00      |

Seven feeds of 6 ounces. Interval, three hours.

*March 24.*—Weight stationary; motions yellow, infrequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 3.75      |
|   | Lactose       | ... | ... | 7.00      |
|   | Whey-proteids | ... | ... | 0.25      |
|   | Caseinogen    | ... | ... | 0.75      |
|   | Alkalinity    | ... | ... | 5.00      |

Seven feeds of 6 ounces. Interval, three hours.

*March 28.*—Has gained 3 ounces; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 4.00      |
|   | Lactose       | ... | ... | 7.00      |
|   | Whey-proteids | ... | ... | 0.25      |
|   | Caseinogen    | ... | ... | 0.75      |
|   | Alkalinity    | ... | ... | 5.00      |

Seven feeds of 6 ounces. Interval, three hours.

*March 31.*—Has gained 5 ounces; motions yellow, small.

*April 4.*—Has lost 1 ounce.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R   | Fat        | ..  | ... | 3'00      |
|   | Lactose    | ... | ... | 6'00      |
|   | Proteids   | ... | ... | 1'00      |
|   | Alkalinity | ... | ... | 5'00      |
| Seven feeds of 6 ounces. Interval, three hours. |            |     |     |           |

*April 7.*—Weight stationary; motions yellow.

*April 11.*—Has gained 3 ounces; motions yellow.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R   | Fat        | ... | ... | 3'00      |
|   | Lactose    | ... | ... | 6'00      |
|   | Proteids   | ... | ... | 1'00      |
|   | Alkalinity | ... | ... | 5'00      |
| Seven feeds of 6 ounces. Interval, three hours. |            |     |     |           |

*April 14.*—Has gained 5 ounces; motions yellow.

*April 18.*—Has lost 1 ounce; motions yellow.

*April 21.*—Has gained 3 ounces; motions yellow.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R   | Fat        | ... | ... | 4'00      |
|   | Lactose    | ... | ... | 6'00      |
|   | Proteids   | ... | ... | 1'25      |
|   | Alkalinity | ... | ... | 5'00      |
| Seven feeds of 6 ounces. Interval, three hours. |            |     |     |           |

*April 25.*—Has gained 1 ounce; motions yellow.

*April 28.*—Has lost 2 ounces; motions yellow.

*May 2.*—Has gained 1 ounce; motions yellow.

*May 5.*—Has gained 1 ounce; motions yellow.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R | Fat        | ... | ... | 4'00      |
|   | Lactose    | ... | ... | 6'00      |
|   | Proteids   | ... | ... | 1'50      |
|   | Alkalinity | ... | ... | 5'00      |

Seven feeds of 6 ounces. Interval, three hours.

*May 9.*—Has gained 3 ounces. Infant discharged weighing 10 pounds 12 ounces.

**Remarks.**—The above case is the most interesting in the writer's experience. The original prescription was so delicate that further refinement appeared superfluous, and the case was regarded as probably one of imperfect development of the digestive structures or as syphilis. Mercury was tried on more than one occasion. As a forlorn hope, after the infant had been in hospital for two months, and had been in an extremely critical condition on several occasions, the prescription of November 18 was written.

## CASE XX.

(R. 275.) E. C., male infant. Admitted February 10, 1905. Age, three and a half months; weight, 8 pounds 6 ounces.

**History.**—‘Fine baby at birth—quite plump.’ Breast-fed for the first fortnight. The infant suffered from wind, and the doctor found there was no fat in the milk. Then given Nestlé’s food, then cow’s milk and water, then ‘humanized’ milk, then taken to another doctor, who ordered Mellin’s Food; no improvement followed, and the infant was then taken to a ‘homœopathic’ doctor, who ordered Benger’s Food. Has been wasting continuously; motions hard, dark brown. Inguinal hernia.

**Treatment and Progress.**

| <i>February 10.</i> |               |     |     |                 |
|---------------------|---------------|-----|-----|-----------------|
| Rx                  | Castor-oil    | ... | ... | ... ʒi. statim. |
|                     |               |     |     | Per cent.       |
|                     | Fat           | ... | ... | ... 1·50        |
|                     | Lactose       | ... | ... | ... 5·50        |
|                     | Whey-proteids | ... | ... | ... 0·50        |
|                     | Caseinogen    | ... | ... | ... 0·25        |
|                     | Alkalinity    | ... | ... | ... 5·00        |

Ten feeds of  $2\frac{1}{2}$  ounces. Interval, two hours.

*February 14.*—Has lost 2 ounces; motions infrequent, yellow. Not satisfied.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1.75      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.50      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Ten feeds of  $3\frac{1}{2}$  ounces. Interval, two hours.

*February 17.*—Has gained 6 ounces; motions yellow, with curds.

*February 21.*—Has lost 4 ounces; motions yellow, with curds.

*February 24.*—Has gained 2 ounces; motions yellow, with curds. Feeds increased to  $4\frac{1}{2}$  ounces.

*February 28.*—Weight stationary.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 2.00      |
|   | Lactose       | ... | ... | 6.50      |
|   | Whey-proteids | ... | ... | 0.50      |
|   | Caseinogen    | ... | ... | 0.50      |
|   | Alkalinity    | ... | ... | 5.00      |

Ten feeds of 5 ounces. Interval, two hours.

*March 3.*—Weight stationary; motions greenish-yellow, with fat, sometimes green.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R | Fat           | ... | ... | 1.75      |
|   | Lactose       | ... | ... | 6.00      |
|   | Whey-proteids | ... | ... | 0.50      |
|   | Caseinogen    | ... | ... | 0.25      |
|   | Alkalinity    | ... | ... | 5.00      |

Ten feeds of 5 ounces. Interval, two hours.

*March 7.*—Has gained 4 ounces; motions loose, yellow, with fat.



*March 10.*—Has lost 1 ounce ; motions loose, yellow, frequent.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 1'00      |
|   | Lactose       | ... | ... | 5'00      |
|   | Whey-proteids | ... | ... | 0'50      |
|   | Caseinogen    | ... | ... | 0'25      |
|   | Alkalinity    | ... | ... | 5'00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*March 14.*—Has gained 1 ounce ; motions loose yellow, with curds (five in twenty-four hours).

*March 17.*—Has lost 1 ounce ; motions greenish-yellow (five in twenty-four hours).

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 0'50      |
|   | Lactose       | ... | ... | 5'00      |
|   | Whey-proteids | ... | ... | 0'25      |
|   | Caseinogen    | ... | ... | 0'50      |
|   | Alkalinity    | ... | ... | 5'00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*March 21.*—Has lost 2 ounces ; motions yellow, with curds.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 1'00      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'25      |
|   | Caseinogen    | ... | ... | 0'75      |
|   | Alkalinity    | ... | ... | 5'00      |
| Ten feeds of 5 ounces. Interval, two hours. |               |     |     |           |

*March 24.*—Has gained 4 ounces ; motions yellow ; general condition improved.

*March 28.*—Has gained 10 ounces ; motions yellow.

|   |               |     |     | Per cent. |
|---|---------------|-----|-----|-----------|
| R   | Fat           | ... | ... | 1'25      |
|   | Lactose       | ... | ... | 6'50      |
|   | Whey-proteids | ... | ... | 0'25      |
|   | Caseinogen    | ... | ... | 1'00      |
|   | Alkalinity    | ... | ... | 5'00      |
| Ten feeds of 6 ounces. Interval, two hours. |               |     |     |           |

*March 31.*—Has gained 5 ounces ; motions yellow.

*April 4.*—Has gained 7 ounces ; motions yellow.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R | Fat        | ... | ... | 1'50      |
|   | Lactose    | ... | ... | 6'50      |
|   | Proteids   | ... | ... | 1'25      |
|   | Alkalinity | ... | ... | 5'00      |

Eight feeds of 7 ounces. Interval, two and a half hours.

*April 7.*—Has lost 4 ounces ; motions yellow, with fat.  
Interval of feeding, three hours.

*April 11.*—Has gained 5 ounces ; motions yellow.

*April 14.*—Has lost 1 ounce ; motions yellow.

|   |            |     |     | Per cent. |
|---|------------|-----|-----|-----------|
| R | Fat        | ... | ... | 2'00      |
|   | Lactose    | ... | ... | 6'50      |
|   | Proteids   | ... | ... | 1'50      |
|   | Alkalinity | ... | ... | 5'00      |

Nine feeds of 7 ounces. Interval, three hours.

*April 18.*—Has gained 7 ounces ; motions yellow.  
Infant discharged weighing 10 pounds 14 ounces.

**Remarks.**—In teaching the principles of milk-prescription, the writer has found that practitioners find their

chief difficulty in the differentiation between and adjustment of the proteids. The prescriptions in this case from March 10 afford an excellent illustration of the methods of adjustment, and demonstrate the importance of the proteid content, not only in regard to amount,<sup>\*</sup> but also in regard to the character of the proteids.

THE END



BY THE SAME AUTHOR

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# THE NUTRITION OF THE INFANT

BY

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